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■ General Description

The OCH2985-VF is a single-phase, brushless, DC motor drivers with integrated power MOSFETs and a Hall Effect sensor. The OCH2985-VF drives single-phase brushless DC fan motors with up to 1.3A of output current limit. The IC has a 3.5V to 16V input voltage range and input line reverse voltage protection to save the external diode on the supply line.

The OCH2985-VF controls the rotational speed through the PWM signal on the PWM pin. TheOCH2985-VF has a rotational speed detection feature and rotor lock fault indication on FG/RD with an open-drain collector output. The output speed versus the input duty curve can be programmed easily for flexible use. To reduce fan driver audible noise and power loss, theOCH2985-VF features a soft on/off phase transition and automatic phase-lock function of the motor winding BEMF and current.

Full protection features include input over curren t protection (OCP), under-voltage lockout (UVLO), ro tor deadlock protection, thermal shutdown, and input reverse protection.

The OCH2985-VF requires a minimal number of external components to save solution cost. The OCH2985-VF is available in TSOT23-6L、SOP-8F、FTSOT23-6L packages.

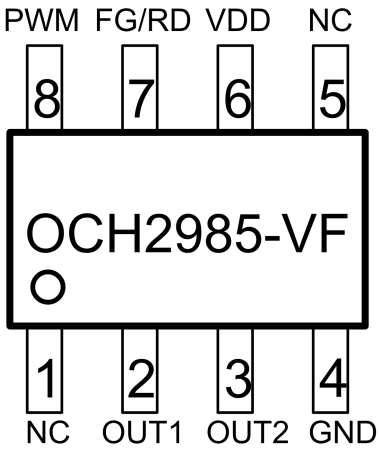
■ Features

- Embedded Hall Sensor with High Sensitivity
- Wide 3.5V to 16V Operating Input Range
- Up to 1.3A Programmable Current Limit
- Integrated Power MOSFETs:
  SOP-8F-Total 1.0Ω(HS+LS)
  FTSOT23-6L-Total 0.88Ω(HS+LS)
- High Sensitivity Hall Sensor
  BOP (6GS), BRP (-6GS)
- Programmable Speed Curve
- Built-In Adjustable Speed Curve Corner Setting
- Automatic Phase Lock Detection of Winding BEMF and Current Zero-Crossing
- Soft On/Off Phase Transition
- Soft Start and Soft Restart Function
- Rotational Speed Indicator (FG) Signal
- 100Hz to 50kHz PWM Input Frequency Range
- Fixed 26kHz Output Switching Frequency
- Built-In Reverse Voltage Protection
- Built-In input OCP, UVLO
- Lock-shutdown protection & auto-restart function
- Thermal Protection and Automatic Recovery
- -40°C to + 125°C Temperature Range
- RoHS Compliant and Halogen Free
- Available in TSOT23-6L、SOP-8F、FTSOT23-6L

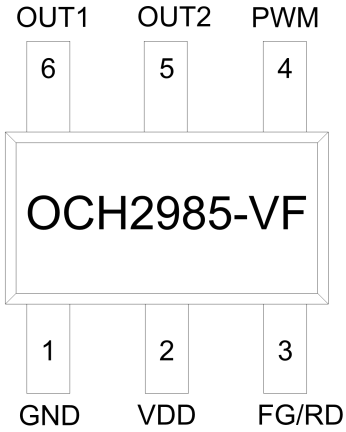
■ Applications

■ Pin Configuration

(Top View)



SOP-8F



TSOT23-6L/FTSOT23-6L

Figure 1, Pin Assignments Of OCH2985-VF

Pin Name	Pin Number		Pin Function
	SOP-8F	TSOT23-6L /FTSOT23-6L	
VDD	6	2	Positive Power Supply
OUT1	2	6	Output 1
OUT2	3	5	Output 2
GND	4	1	Ground
PWM	8	4	PWM Signal input
FG/RD	7	3	FG Or RD output. This is an open-drain output.
NC	1、5	-	NC Pin

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■ Typical Application Circuit

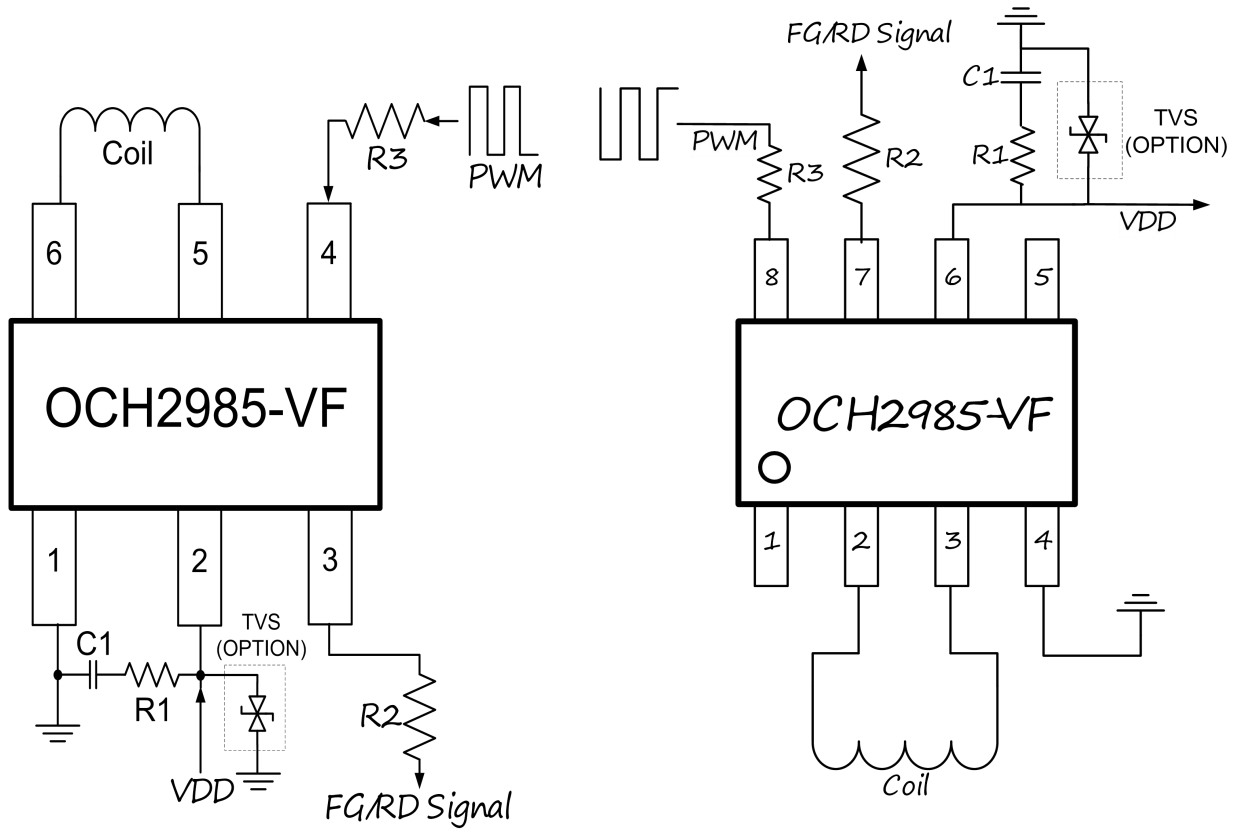

Figure 2, Typical Application Circuit Of OCH2985-VF

Note1:

1) Must use least C1=4.7~10uF and R1=1Ω(Typ.)for the decoupling between VDD and GND and place the capacitor as close to the IC as Possible.
2) A TVS diode is option in application
3) The R2 & R3 is used to prevent PWM and FG/RD pin，typical value is 100 Ω.

■ Ordering Information

Part Number	Package Type	Packing Quantity	B_{OP}/B_{RP} (Gauss)	Temperature	Eco Plan	Lead
OCH2985SFAD-VF	SOP-8F	4000pcs /Reel	±6 (Typ.)	-40 ~ +125°C	ROHS	Cu
OCH2985TOAD-VF	FTSOT23-6L	3000pcs /Reel	±6 (Typ.)	-40 ~ +125°C	ROHS	Cu
OCH2985TWAD-VF	TSOT23-6L	3000pcs /Reel	±6 (Typ.)	-40~ +125°C	ROHS	Cu

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■ Block Diagram

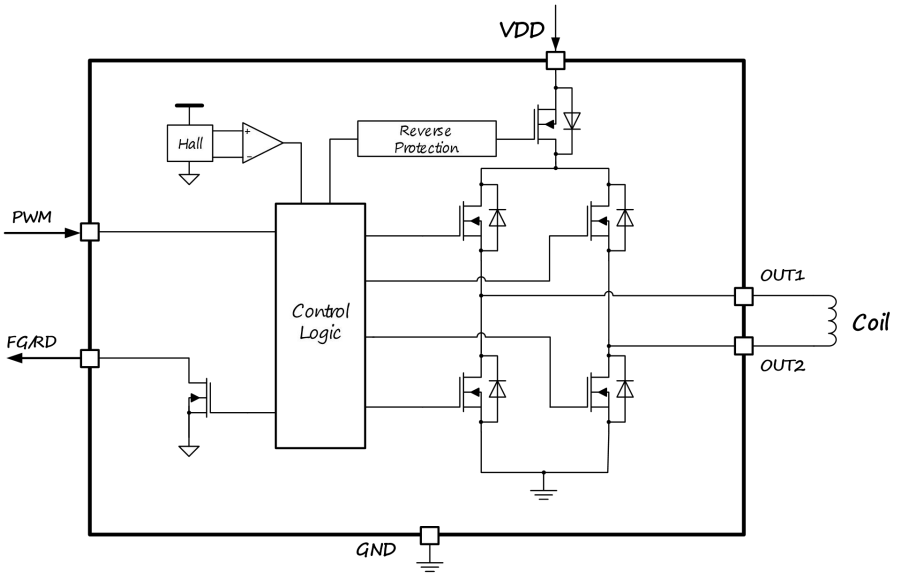

Figure 3, Block Diagram Of OCH2985-VF

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